

# Antifriction Bearings: 2004

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## Current Industrial Reports

Current data are released electronically on Internet for all individual surveys as they become available. Use: <http://www.census.gov/mcd/>. Individual reports can be accessed by choosing "Current Industrial Reports (CIR)," clicking on "CIRs by Subsector;" then choose the survey of interest. Follow the menu to view the PDF file or to download the worksheet file (XLS format) to your personal computer.

These data are also available on Internet through the U.S. Department of Commerce and STAT-USA by subscription. The Internet address is: [www.stat-usa.gov/](http://www.stat-usa.gov/). Follow the prompts to register. Also, you may call 202-482-1986 or 1-800-STAT-USA, for further information.

SUMMARY OF FINDINGS. The value of shipments of antifriction bearings, components and parts was \$5,746.9 million in 2004, an increase of

7 percent, from \$5,349.8 million in 2003. The 2004 total which includes complete unmounted ball bearings was \$1,888.6 million, an increase of 2 percent, from \$1,848.8 million in 2003. Tapered roller bearings, including cups and cones, unmounted, increased 18 percent to \$1,724.7 million, from \$1,456.5 million in 2003. Roller bearings (except tapered) unmounted, was \$1,030.6 million in 2004, an increase of 2 percent, from \$1,006.4 million in 2003. Mounted bearings (except plain) decreased 3 percent to \$461.1 million, from \$476.6 million in 2003; and parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately was \$641.9 million, an increase of 14 percent, from \$561.5 million in 2003.

For general CIR information, explanation of general terms and historical note, see the appendix.

Address inquiries concerning these data to Primary Goods Industries Branch, Manufacturing and Construction Division (MCD), Washington, DC 20233-6900, or call Gloria Peebles-Butler, 301-763-4732. For mail or fax copies of this publication, please contact the Information Services Center, MCD, Washington, DC 20233-6900, or call 301-763-4673.

# U S C E N S U S B U R E A U

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U.S. Department of Commerce  
Economics and Statistics Administration  
U.S. CENSUS BUREAU

Table 1. Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts by Product Class: 1999 to 2004  
[Millions of dollars]

Product code	Product description	2004		2003		2002	2001	2000	1999
332991	Ball and roller bearings.....	5,746.9		5,349.8		5,412.0	5,391.1	5,769.5	5,766.1
3329911	Ball bearings, complete, unmounted.....	1,888.6		1,848.8		1,945.9	1,989.8	1,978.0	1,974.4
3329913	Tapered roller bearings, including cups and cones, unmounted.....	1,724.7		1,456.5		1,376.0	1,296.7	1,501.9	1,531.5
3329915	Roller bearings (except tapered), unmounted.....	1,030.6		1,006.4		1,039.9	1,176.5	1,246.6	1,196.2
3329917	Mounted bearings (except plain).....	461.1	r/	476.6	r/	453.0	383.9	413.5	445.4
3329919	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers, sold separately.....	641.9		561.5		597.2	544.3	629.5	618.6

r/Revised by 5 percent or more from previously published data.

Table 2. Domestic Quantity and Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts: 2004 and 2003  
[Quantity in thousands of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2004				2003			
			Quantity		Value		Quantity		Value	
332991	Ball and roller bearings.....	(X)	(X)		5,746,945		(X)		5,349,750	
3329911	Ball bearings, complete, unmounted.....	63 a/	373,945	a/	1,888,608	a/	380,618	a/	1,848,757	
	Annular, including self-aligning:									
	Ground or precision:									
	Single-row conrad:									
	Miniature (below 9 mm outside diameter):									
3329911101	Regular (ABEC 1 and 3).....	4	(D)	c/	8,786		(D)	b/	(D)	
3329911102	Precision (ABEC 5 and up).....	4 a/	3,318		16,294	a/	3,495		15,677	
	Other regular (ABEC 1 and 3):									
3329911103	9 mm outside diameter through 30 mm outside diameter.....	7	(D)		23,078		(D)		32,637	
3329911104	Over 30 mm outside diameter through 52 mm outside diameter.....	17	73,563		106,666		78,028		115,154	
3329911105	Over 52 mm outside diameter through 100 mm outside diameter.....	19	27,053		151,535		30,238		169,746	
3329911107	Over 100 mm outside diameter.....	17	3,053	b/	152,071		3,235	b/	155,834	
	Other precision (ABEC 5 and up):									
3329911109	9 mm outside diameter through 30 mm outside diameter.....	8	3,692		50,496		3,390		45,578	
3329911111	Over 30 mm outside diameter through 52 mm outside diameter.....	8	418		33,512		405		31,250	
3329911112	Over 52 mm outside diameter through 100 mm outside diameter.....	7	183		27,549		171		25,538	
3329911113	Over 100 mm outside diameter.....	7	70	a/	39,271		57	a/	40,337	
3329911114	Single-row maximum capacity type.....	9	980		17,137		1,013		17,469	
3329911118	Integral shaft and integral spindle ball bearings.....	6	19,338	a/	262,478		(D)	a/	262,280	
3329911120	Double-row.....	16	31,983		616,344		28,840		591,983	
	Angular contact:									
3329911119	Regular.....	14	675		75,235		598		66,394	
3329911123	Precision.....	8	1,930		81,340		(D)		(D)	
3329911124	All other ground or precision bearings (ABEC 1 and up).....	3	(D)		(D)		(D)		(D)	
3329911127	Ground bearings of less than ABEC 1 precision....	7 c/	4,432	b/	27,647	c/ r/	4,059	b/r/	34,254	
3329911129	Unground (less than ABEC 1).....	14 b/	151,810	b/	92,345	b/	146,173	b/	84,992	
	Thrust ball bearings:									
3329911133	Ground.....	10	(D)		19180		(D)	r/	16299	
3329911135	Unground.....	5	7,973		14,435		6,955		11,284	
3329911155	Other ball bearings.....	13	17,675	b/	69,305	r/	9,266	b/	54,354	
3329913	Tapered roller bearings, including cups and cones, unmounted.....	20	(D)		1,724,685		243,762		1,456,498	
3329913132	Cup and cone assemblies shipped as a set .....	17	(D)		(D)		(D)		(D)	
3329913133	Cups shipped separately.....	14	113,460		306,457		106,814		266,073	
3329913134	Cone assemblies shipped separately.....	15	(D)		(D)		(D)		(D)	
3329915	Roller bearings (except tapered), unmounted.....	39	(D)		1,030,607		(D)		1,006,438	
	Cylindrical roller bearings:									
3329915111	Regular (ABEC 1 and 3).....	26	(D)		312,526		(D)		285,012	
3329915112	Precision (ABEC 5 and up).....	6	198		81,503		171		77,489	
	Spherical roller bearings, including hourglass and barrel:									
3329915124	Single-row.....	6	(D)		24,103		(D)		24,102	
3329915125	Double-row.....	7	(D)		170,123		673		161,427	
3329915141	Needle roller bearings.....	14	(D)		420,342		(D)		438,363	
3329915193	Other roller bearings, n.e.c. ....	13	(D)		22,010		(D)		20,045	
3329917	Mounted bearings (except plain).....	19 a/	7,943	a/	461,107	a/	9,186	a/ r/	476,578	
3329917117	Ball bearings, unit- and/or split-mounted.....	10	6,842		228,957		8,191	r/	274,758	
	Roller:									
3329917153	Unit-mounted.....	11 b/	954	b/	198,526	b/	853	b/ r/	169,627	
3329917155	Split-mounted.....	6 b/	148	b/	33,624	b/	142	a/	32,193	
3329919	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately.....	65	(X)	a/	641,938		(X)	a/	561,479	

Table 2. Domestic Quantity and Value of Shipments of Antifriction Ball and Roller Bearings, Components, and Parts: 2004 and 2003  
[Quantity in thousands of units. Value in thousands of dollars]

Product code	Product description	No. of cos.	2004				2003			
			Quantity		Value		Quantity		Value	
3329919111	Balls (millions of units) 1/.....	22	a/	12,352	a/	218,713	a/	10,650		192,975
3329919121	Other antifriction ball bearing components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls).....	16		(X)		(D)		(X)		(D)
3329919131	Rollers (millions of units) 2/.....	23	b/	13,619	b/	146,939	a/	13,254	b/	134,568
	Other roller bearing parts and components (except rollers):									
3329919135	For tapered roller bearings (except cup cone assemblies).....	6		(X)		100,069		(X)		79,347
3329919136	For cylindrical roller bearings.....	8		(X)		(D)		(X)		(D)
3329919137	For spherical roller bearings.....	1		(X)		(D)		(X)		(D)
3329919149	For other roller bearings.....	12		(X)		35,147		(X)	r/	35,367
3329919159	Housings and parts and components for housings, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	7		(X)		43,460		(X)		30,581

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. r/Revised by 5 percent or more from previously published data. X Not applicable.

1/Production for all purposes of balls for 2004 and 2003 is 12.3 millions of units and 10.6 millions of units, respectively.

2/Production for all purposes of rollers for 2004 and 2003 is (D) millions of units and (D) millions of units, respectively.

Note: Percent of estimation of each item is indicated as follows: a/10 to 25 percent of this item is estimated. b/26 to 50 percent of this item is estimated. c/Over 50 percent of this item is estimated.

Table 3. Shipments, Exports, Imports, and Apparent Consumption of Antifriction Ball and Roller Bearings, Components, and Parts: 2004  
[Quantity in thousands of units. Value and duty in thousands of dollars]

Product code	Product description	Manufacturers' shipments		Exports of domestic merchandise 1/		Imports for consumption 2/		Apparent consumption 3/	
		Quantity	Value f.o.b. plant	Quantity	Value at port	Quantity	C.i.f. and calculated duty	Quantity	Value
	Total .....	(X)	5,746,945	(X)	1,125,272	(X)	1,722,787	(X)	6,344,460
	Ball bearings, complete, unmounted:								
	Annular, including self-aligning:								
	Ground or precision:								
	Single-row conrad:								
3329911101, 102	Miniature (below 9 mm outside diameter), regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	(D)	25,080	988	9,236	16,227	8,436	(D)	24,280
3329911103, 109	Other regular and other precision (ABEC 5 and up): 9 mm outside diameter through 30 mm outside diameter.....	(D)	73,574	685	13,049	25,305	101,504	(D)	162,029
3329911104, 111	Over 30 mm outside diameter through 52 mm outside diameter.....	73,981	140,178	2,043	28,729	219,882	162,039	291,820	273,488
3329911105, 112	Over 52 mm outside diameter through 100 mm outside diameter.....	27,236	179,084	637	13,105	47,828	128,129	74,427	294,108
3329911107, 113	Over 100 mm outside diameter.....	3,123	191,342	380	13,808	4,097	50,504	6,840	228,038
3329911114	Single-row maximum capacity type.....	980	17,137	147	6,862	14,395	14,145	15,228	24,420
3329911118	Integral shaft and integral spindle.....	19,338	262,478	2,546	35,608	26,907	51,534	43,699	278,404
3329911120	Double-row.....	31,983	616,344	105	7,487	8,776	24,189	40,654	633,046
3329911119, 123	Angular contact, regular and precision.....	2,605	156,575	9,262	44,477	9,799	106,543	3,142	218,641
3329911124, 127, 129, 135	All other ground or precision (ABEC 1 and up) and ground bearings of less than ABEC 1 precision; annular ball bearings including self-aligning, unground (less than ABEC 1); and unground thrust ball bearings.....	(D)	(D)	1,746	11,430	23,716	18,977	(D)	(D)
3329911133	Ground thrust ball bearings.....	(D)	19,180	2,631	12,780	7,702	18,068	(D)	24,468
3329911155	Other ball bearings.....	17,675	69,305	26,757	147,320	15,624	80,305	6,542	2,290
	Tapered roller bearings, including cups and cones, unmounted:								
3329913132	Cup and cone assemblies shipped as a set.....	(D)	(D)	4,894	145,269	31,369	116,994	(D)	(D)
3329913133	Cups shipped separately.....	113,460	306,457	9,669	45,285	48,489	83,650	152,280	344,822
3329913134	Cone assemblies shipped separately.....	(D)	(D)	13,992	151,935	37,037	111,788	(D)	(D)
3329915111, 112	Cylindrical roller bearings, regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	(D)	394,029	4,142	74,877	25,724	134,619	(D)	453,771
	Spherical roller bearings, including hourglass and barrel:								
3329915124	Single-row.....	(D)	24,103	153	7,444	400	7,460	(D)	24,119
3329915125	Double-row.....	(D)	170,123	3,838	26,818	1,107	58,255	(D)	201,560
3329915141	Needle rolling bearings.....	(D)	420,342	20,192	60,560	59,477	41,013	(D)	400,795
3329915193	Other roller bearings, n.e.c.....	(D)	22,010	412	7,753	1,701	6,220	(D)	20,477
	Mounted bearings (except plain):								
3329917117	Ball bearings, unit- and/or split-mounted.....	6,842	228,957	651	22,545	10,859	38,201	17,050	244,613
3329917153, 155	Roller bearings, unit- and split-mounted.....	1,102	232,150	224	12,003	4,226	8,905	5,104	229,052
	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately:								
3329919111	Balls (millions of units).....	12,352	218,713	(X)	30,240	5,975	20,756	(X)	209,229
3329919121	Other antifriction ball bearings components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls).....	(X)	(D)	(X)	48,105	272,938	126,598	(X)	(D)
3329919131	Rollers (millions of units).....	13,619	146,939	(X)	62,869	6,136	37,898	(X)	49,275
	Other roller bearing parts and components (except rollers):								
3329919135	For tapered roller bearings (except cup and cone assemblies).....	(X)	100,069	(X)	29,307	(X)	92,714	(X)	163,476
3329919136	For cylindrical roller bearings.....	(X)	(D)	(X)	2,826	(X)	20,698	(X)	(D)
3329919137	For spherical roller bearings.....	(X)	(D)	(X)	2,179	(X)	9,445	(X)	(D)
3329919149	For other roller bearings.....	(X)	35,147	(X)	24,471	(X)	7,403	(X)	18,079
3329919159	Housings and parts and components for housing, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	(X)	43,460	(X)	26,895	(X)	35,797	(X)	52,362

D Withheld to avoid disclosing data for individual companies. n.e.c. Not elsewhere classified. X Not applicable.

1/Source: Census Bureau report EM 545, U.S. Exports.

2/Source: Census Bureau report IM 145, U.S. Imports for Consumption.

3/Apparent consumption is derived by subtracting exports from manufacturer's shipments plus imports.

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
	Ball bearings, complete, unmounted: Annular, including self-aligning: Ground or precision: Single-row conrad: Miniature (below 9 mm outside diameter), regular (ABEC 1 and 3) and precision (ABEC 5 and up).....	8482.10.5036	8482.10.5036
3329911101, 102			
	Other regular and other precision (ABEC 5 and up): 9 mm outside diameter through 30 mm outside diameter.....	8482.10.5044	8482.10.5044
3329911103, 109			
	Over 30 mm outside diameter through 52 mm outside diameter.....	8482.10.5048	8482.10.5048
3329911104, 111			
	Over 52 mm outside diameter through 100 mm outside diameter.....	8482.10.5052	8482.10.5052
3329911105, 112			
	Over 100 mm outside diameter.....	8482.10.5056	8482.10.5056
3329911107, 113			
3329911114	Single-row maximum capacity type.....	8482.10.5032	8482.10.5032
3329911118	Integral shaft and integral spindle.....	8482.10.1000	8482.10.1040 8482.10.1080
3329911120	Double-row.....	8482.10.5060	8482.10.5060
3329911119, 123	Angular contact, regular and precision.....	8482.10.5016 8482.10.5024 8482.10.5028	8482.10.5016 8482.10.5024 8482.10.5028
3329911124, 127, 129, 135	All other ground or precision bearings (ABEC 1 and up) and ground bearings of less than ABEC 1 precision; annular ball bearings, including self-aligning, unground (less than ABEC 1); and unground thrust ball bearings.....	8482.10.5004 8482.10.5064	8482.10.5004 8482.10.5064
3329911133	Ground thrust ball bearings.....	8482.10.5008	8482.10.5008
3329911155	Other ball bearings.....	8482.10.5012 8482.10.5068	8482.10.5012 8482.10.5068
	Tapered roller bearings, including cups and cones, unmounted: Cup and cone assemblies shipped as a set.....	8482.20.0020 8482.20.0030 8482.20.0040 8482.20.0060	8482.20.0020 8482.20.0030 8482.20.0040 8482.20.0060
3329913132			
	Cups shipped separately.....	8482.99.3010	8482.99.1540
3329913133			
	Cone assemblies shipped separately.....	8482.20.0070 8482.20.0080	8482.20.0070 8482.20.0080
3329913134			
3329915111, 112	Cylindrical roller bearings, regular (ABEC 1 and 3) and precision (ABEC 5 and up)...	8482.50.0000	8482.50.0000
	Spherical roller bearings, including hourglass and barrel: Single-row.....	8482.30.0040	8482.30.0040
3329915124			
	Double-row.....	8482.30.0080	8482.30.0080
3329915125			

Table 4. Comparison of North American Industry Classification System (NAICS)-Based Product Codes with Schedule B Export Codes and HTSUSA Import Codes: 2004

Product code	Product description	Export code 1/	Import code 2/
3329915141	Needle roller bearings.....	8482.40.0000	8482.40.0000
3329915193	Other roller bearings, n.e.c. ....	8482.80.0020 8482.80.0040 8482.80.0060	8482.80.0020 8482.80.0040 8482.80.0060
3329917117	Mounted ball bearings (except plain): Ball bearings, unit- and/or split-mounted.....	8483.20.0010	8483.20.4040 8483.20.8040
3329917153, 155	Roller bearings, unit- and split-mounted.....	8483.20.0050	8483.20.4080 8483.20.8080
3329919111	Parts and components for ball and roller bearings (except cups and cones), including balls and rollers sold separately: Balls (millions of units).....	8482.91.0010 8482.91.0020	8482.91.0010 8482.91.0020
3329919121	Other antifriction ball bearings components and parts, including unassembled ball bearings, cages, races, seals, shields, etc. (except balls)....	8482.99.1010 8482.99.1050	8482.99.0500 8482.99.3500
3329919131	Rollers (millions of units).....	8482.91.0040 8482.91.0050 8482.91.0070 8482.91.0080 8482.91.0090	8482.91.0040 8482.91.0050 8482.91.0070 8482.91.0080 8482.91.0090
3329919135	Other roller bearing and components (except rollers): For tapered roller bearings (except cup and cone assemblies).....	8482.99.3050	8482.99.1580 8482.99.4500
3329919136	For cylindrical roller bearings.....	8482.99.7060	8482.99.2560 8482.99.6560
3329919137	For spherical roller bearings.....	8482.99.5000	8482.99.2520 8482.99.6510
3329919149	For other roller bearings.....	8482.99.7030 8482.99.7090	8482.99.2540 8482.99.6530
3329919159	Housings and parts and components for housings, including housing closures, collars, spacers, sleeves, adapters, and other miscellaneous items.....	8483.30.5020	8483.30.4040 8483.30.8020

n.e.c. Not elsewhere classified.

1/Source: 2004 edition, Harmonized System-based Schedule B, Statistical Classification of Domestic and Foreign Commodities Exported from the United States.

2/Source: Harmonized Tariff Schedule of the United States, Annotated (2004).

# Appendix.

## General CIR Survey Information, Explanation of General Terms and Historical Note

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### GENERAL

The CIR program has been providing monthly, quarterly, and annual measures of industrial activity for many years. Since 1904, with its cotton and fats and oils surveys, the CIR program has formed an essential part of an integrated statistical system involving the quinquennial economic census, manufacturing sector, and the annual survey of manufactures. The CIR surveys, however, provide current statistics at a more detailed product level than either of the other two statistical programs.

The primary objective of the CIR program is to produce timely, accurate data on production and shipments of selected products. The data are used to satisfy economic policy needs and for market analysis, forecasting, and decision making in the private sector. The product-level data generated by these surveys are used extensively by individual firms, trade associations, and market analysts in planning or recommending marketing and legislative strategies, particularly if their industry is significantly affected by foreign trade. Although production and shipments information are the two most common data items collected, the CIR program collects other measures also such as inventories, orders, and consumption. These surveys measure manufacturing activity in important commodity areas such as textiles and apparel, chemicals, primary metals, computer and electronic components, industrial equipment, aerospace equipment, and consumer goods.

The CIR program uses a unified data collection, processing, and publication system. The U.S. Census Bureau updates the survey panels for most reports annually and reconciles the estimates to the results of the broader-based annual survey of manufactures and the economic census, manufacturing sector. The manufacturing sector provides a complete list of all producers of the products covered by the CIR program and serves as the primary source for CIR sampling. Where a small number of producers exist, CIR surveys cover all known producers of a product. However, when the number of producers is too large, cutoff and random sampling techniques are used. Surveys are continually reviewed and modified to provide the most up-to-date information on products produced. The CIR program includes a group of mandatory and voluntary surveys. Typically the monthly and quarterly surveys are conducted on a voluntary basis. Those companies that choose not to respond to the voluntary surveys are required to submit a mandatory annual counterpart corresponding to the more frequent survey.

### NORTH AMERICAN INDUSTRY CLASSIFICATION SYSTEM (NAICS), 1997

The adoption of the North American Industry Classification System (NAICS) in the 1997 Economic Census has had a major impact on the comparability of current and historic data. Approximately half of the industries in the manufacturing sector of NAICS do not have comparable industries in the Standard Industrial Classification (SIC) system that was used in the past.

While most of the change affecting the manufacturing sector was change within the sector, some industries left manufacturing and others came into manufacturing. Prominent among those that left manufacturing are logging and portions of publishing. Prominent among the industries that came into the manufacturing sector are bakeries, candy stores where candy is made on the premises, custom tailors, makers of custom draperies, and tire retreading. The net effect of the classification changes are such that if the 1997 value of shipments data for all manufacturers were tabulated on an SIC basis, it would be approximately 3 percent higher.

Listed below are the NAICS sectors:

- 21 Mining
- 22 Utilities
- 23 Construction
- 31-33 Manufacturing
- 42 Wholesale Trade
- 44-45 Retail Trade
- 48-49 Transportation and Warehousing
- 51 Information
- 52 Finance and Insurance
- 53 Real Estate and Rental and Leasing
- 54 Professional, Scientific, and Technical Services
- 55 Management of Companies and Enterprises
- 56 Administrative and Support and Waste Management and Remediation Services
- 61 Educational Services
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services
- 81 Other Services (except Public Administration)

(Not listed above are the Agriculture, Forestry, Fishing, and Hunting sector (NAICS 11), partially covered by the census of agriculture conducted by the U.S. Department of Agriculture, and the Public Administration sector (NAICS 92), covered by the census of governments conducted by the Census Bureau.)



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The 20 NAICS sectors are subdivided into 96 subsectors (three-digit codes), 313 industry groups (four-digit codes), and, as implemented in the United States, 1170 industries (five- and six-digit codes).

## FUNDING

The Census Bureau funds most of the surveys. However, a number of surveys are paid for either fully or partially by other Federal Government agencies or private trade associations. A few surveys are mandated, but all are authorized by Title 13 of the United States Code.

## RELIABILITY OF DATA

Survey error may result from several sources including the inability to obtain information about all cases in the survey, response errors, definitional difficulties, differences in the interpretation of questions, mistakes in recording or coding the reported data, and other errors of collection, response, coverage, and estimation. These nonsampling errors also occur in complete censuses. Although no direct measurement of the biases due to these nonsampling errors has been obtained, precautionary steps were taken in all phases of the collection, processing, and tabulation of the data in an effort to minimize their influence.

A major source of bias in the published estimates is the imputing of data for nonrespondents, for late reporters, and for data that fail logic edits. Missing figures are imputed based on period-to-period movements shown by reporting firms. A figure is considered to be an impute if the value was not directly reported on the questionnaire, directly derived from other reported items, directly available from supplemental sources, or obtained from the respondent during the analytical review phase. Imputation generally is limited to a maximum of 10 percent for any one data cell. Figures with imputation rates greater than 10 percent are suppressed or footnoted. The imputation rate is not an explicit indicator of the potential error in published figures due to nonresponse, because the actual yearly movements for nonrespondents may or may not closely agree with the imputed movements. The range of difference between the actual and imputed figures is assumed to be small. The degree of uncertainty regarding the accuracy of the published data increases as the percentage of imputation increases. Figures with imputation rates above 10 percent should be used with caution.

## DATA REVISIONS

Statistics for previous years may be revised as the result of corrected figures from respondents, late reports for which imputations were originally made, or other corrections. Data that have been revised by more than 5 percent from previously published data are indicated by footnotes.

## DISCLOSURE

The Census Bureau collects the CIR data under the authority of Title 13, United States Code, which specifies that the information can only be used for statistical purposes and cannot be published or released in any manner that would identify a person, household, or establishment. "D" indicates that data in the cell have been suppressed to avoid disclosure of information pertaining to individual companies.

## EXPLANATION OF GENERAL TERMS

**Capacity.** The maximum quantity of a product that can be produced in a plant in 1 day if operating for 24 hours. Includes the capacity of idle plants until the plant is reported to be destroyed, dismantled, or abandoned.

**Consumption.** Materials used in producing or processing a product or otherwise removing the product from the inventory.

**Exports.** Includes all types of products shipped to foreign countries, or to agents or exporters for reshipment to foreign countries.

**Gross shipments.** The quantity or value of physical shipments from domestic establishments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale or use. Shipments of products purchased for resale are omitted. Shipments of products made under toll arrangements are included.

**Interplant transfers.** Shipments to other domestic plants within a company for further assembly, fabrication, or manufacture.

**Inventories.** The quantity or value of finished goods, work in progress, and materials on hand.

**Machinery in place.** The number of machines of a particular type in place as of a particular date whether the machinery was used for production, prototype, or sampling, or was idle. Machinery in place includes all machinery set up in operating positions.

**Net receipts.** Derived by subtracting the materials held at the end of the previous month from the sum of materials used during the current month.

**Production.** The total volume of products produced, including: products sold; products transferred or added to inventory after adjustments for breakage, shrinkage, and obsolescence, plus any other inventory adjustment; and products that undergo further manufacture at the same establishment.

**Quantities produced and consumed.** Quantities of each type of product produced by a company for internal consumption within that same company.

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**Quantity and value of new orders.** The sales value of orders received during the current reporting period for products and services to be delivered immediately or at some future date. Also represents the net sales value of contract change documents that increase or decrease the sales value of the orders to which they are related, when the parties concerned are in substantial agreement as to the amount involved. Included as orders are only those that are supported by binding legal documents such as signed contracts or letter contracts.

**Quantity and value of shipments.** The figures on quantity and value of shipments represent physical shipments of all products sold, transferred to other establishments of the same company, or shipped on consignment, whether for domestic or export sale. The value represents the net sales price, f.o.b. plant, to the customer or branch to which the products are shipped, net of discounts, allowances, freight charges, and

returns. Shipments to a company's own branches are assigned the same value as comparable appropriate allocation of company overhead and profit. Products bought and resold without further manufacture are excluded.

**Stocks.** Total quantity of ending finished inventory.

**Unfilled orders (backlog).** Calculated by adding net new orders and subtracting net sales from the backlog at the end of the preceding year.

#### **HISTORICAL NOTE**

Data on antifriction bearings have been collected by the Census Bureau since 1972. Historical data may be obtained from Current Industrial Reports available at your local Federal Depository Library.